Teacher Change: Impact of an Inservice Program in Content Area Reading

As part of the work from the Content Area Reading Project (CARP), which focuses on inservice teacher education in content area reading, a study examined the effects of an inservice content area reading program that involved two three-hour workshops per month on the theory and practical application of teaching methods for content area reading instruction. Both the 25 teachers in the experimental program and the teachers not involved in the project completed measures of teachers' attitudes toward teaching content area reading and of attitudes toward the inservice program. The results showed that the teachers involved in the workshops gained significantly in their attitudes toward content area reading, while the comparison group remained essentially similar on both administrations of the attitude survey. The conclusions drawn from the study were (1) that longterm involvement in inservice training in content area reading improves both knowledge of reading skills and attitudes toward content area reading, and (2) that the role of the reading supervisor was particularly critical to the inservice programs, because the supervisor served as the main link between the monthly theory workshops and the monthly application workshops.

(RL)
As described in the preceding paper by Laine, the Content Area Reading Program (CARP) has been operating through a statewide network of instructors in Pennsylvania. Because we have advocated long-term involvement as the most effective inservice education effort, we welcomed the opportunity to work with the Hollidaysburg (Pennsylvania) Area School District for a three year period (1979-82) under Title IVc funding.

The first year of training involved 25 teachers, Grades 4-10, who taught various content area subjects. Several reading specialists were included in the group. Each month two three-hour workshops were conducted. The first workshop (dubbed the "theory" workshop by the participants) was presented by one of the authors concerning two or more of the topics included in the CARP curriculum. The second workshop of the month provided work time for the teachers to apply the workshop content to their own classrooms. The reading supervisor conducted the "application" workshops with the help of the reading specialists. She also worked with the content teachers in their classrooms, helping them apply content area reading strategies. Laine, then as a graduate student, attended both types of workshops for teachers as well as conducted the workshops for administrators, providing the coordination among inservice efforts for the various school personnel. An optional summer workshop for teachers followed, conducted by the reading supervisor to provide additional time for materials development. A dissemination book was prepared consisting of samples of the work created by the teachers involved in the first year of training.
During the second year we again delivered the CARP curriculum to
different content area teachers. The reading supervisor provided the
main linkage between the "theory" and "application" workshops. The
content teachers and reading specialists who participated during the
first year attended some of the "application" workshops to do further
materials development and serve as resources to the second-year teachers.
The reading supervisor again helped the content area teachers apply
what they were learning in the workshops in their classrooms.

Due to a cutback in Title IVc funding, the design for the third
year had to be modified. Science and social studies teachers at the
high school participated with both the "theory" and "application" work-
shops being conducted by the reading supervisor. The reading specialists
assisted, serving as resource personnel to the content teachers. While
cutbacks in funding usually do not have positive effects, in this
instance we believe it may have since responsibility for the inservice
education in content area reading now belongs completely to the school
district. The CARP curriculum is still being implemented, but university
personnel have been phased out.

The project has also included a research effort which is described
in the next section.

Project Evaluation

Initial comparisons involved the first-year workshop teachers and
all other teachers in the school district, Grades 4-10. All teachers
were tested at the beginning and end of the school year with two
measures of attitude toward teaching reading in the content areas as
well as a criterion-referenced test of knowledge of reading skills. The
instruments, which are described in more detail elsewhere (Dupuis &
Askov, 1977), are briefly summarized.
The first attitude instrument, the Statements Survey, is a twenty-item Likert scale that yields a direct measure of teacher attitude toward incorporating reading instruction in the content areas and has an estimated reliability (coefficient alpha) of .85. A sample item is shown in the Appendix.

A second instrument, the Situations Survey, is a less direct measure of teacher attitude toward content area reading instruction. This instrument, which utilizes the semantic differential technique, consists of twelve items with five sets of bipolar adjectives (such as practical-impractical) to be rated for each item. Each item consists of a classroom situation that a content area teacher might face and a possible diagnostic-prescriptive plan the teacher might follow in the situation described. This instrument has an estimated reliability (coefficient alpha) of .94.

Two questions using the semantic differential format and included as part of the Situations Survey yield two additional scores used in assessing the effects of the inservice program. The first of these scores, the Feasibility score (estimated reliability, coefficient alpha, of .86), is obtained from teacher ratings of the bipolar adjectives feasible-not feasible after each of the twelve items on the Situations Survey. This score was considered a third dimension of attitude in analyzing results.

The other score obtained from this instrument is a self-report measure consisting of teacher ratings of the bipolar adjectives skilled-not skilled after each of the twelve items on the Situations Survey. This Perceived Skill score (estimated test-retest reliability of .93) was designed to measure a teacher's confidence in implementing
the stated diagnostic-prescriptive plan. A sample item from the
Situations Survey is given in the Appendix.

To measure the cognitive aspects of the program, a knowledge-level
criterion-referenced instrument was developed based on the specified
required written objectives each inservice participant was expected to
complete. The thirty-four item Knowledge of Reading Skills Test has
an estimated reliability (KR-20) of .76.

Results and Discussion

Analyses of variance were performed on the difference scores
between the pretests and posttests for both groups (workshop teachers
vs. other teachers). These results are presented in Tables 1 and 2.

As can be seen, the teachers involved in the workshops gained
significantly in their attitudes toward content area reading instruction
and in their knowledge of reading skills and techniques. The comparison
group remained essentially similar on both administrations.

It must also be noted that the first year workshop teachers scored
higher on the pretest for all measures except the Situations Feasibility
and Perceived Skill scores. In other words, they seemed to have felt
more positive toward content area reading instruction and appeared to
know more about it. However, they felt no more certain about the
feasibility of actual implementation in their classrooms nor more
confident in their own abilities to do so. Since they volunteered for
participation in the workshops, while the comparison group did not
volunteer even for testing, it is not surprising that their initial
scores were higher. Differences between the two groups on the pretests were not found in the original CARP data (Dupuis and Askov, 1977), probably because the comparison group consisted of volunteers (for testing only) rather than a whole school faculty as was the case in Hollidaysburg.

As a further check on the validity of inservice training for the first year teachers, we observed their classes during the spring of the second year of the project. We believed that by then the teachers had had adequate time to implement content area reading strategies. We were satisfied that CARP objectives were being implemented in the classrooms observed.

**Conclusions**

Long-term involvement in inservice training in content area reading does improve not only knowledge of reading skills but also attitudes toward content area reading. The Feasibility and Perceived Skill scores of the Situations Survey are particularly interesting indices of confidence that is gained through inservice training.

The role of the reading supervisor was particularly critical as she provided the main linkage between the "theory" workshops delivered by a university professor and the "application" workshops in which the teachers actually created materials incorporating content area reading strategies. Her classroom visits also enabled her to help teachers apply theory in their instruction.

The reading specialists became indispensable team members. Initially content area teachers were reluctant to ask them for help. However, through the workshops the reading specialists grew in their role as resource teachers. In spite of the Title I reading program in
Hollidaysburg being primarily a "pull-out" program to provide special reading services to disabled readers, the reading specialists have now become resource personnel in assisting content teachers. Ultimately, we hope that all content teachers who have been trained will become resources to other teachers.

Teacher change is a long-term process requiring coordinated effort on the part of administrators, supervisors, specialists, and classroom teachers. The question that remains, however, is whether teacher change through inservice education has an impact on student achievement. That question is addressed in the next paper.

Note:

Special thanks is due to Mrs. Carol Stevens, Reading Supervisor, and Dr. Leo Gensante, Director of Secondary Education, Hollidaysburg Area School District.
Table 1
Pre- and Posttest Observed Mean Scores

<table>
<thead>
<tr>
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<th>Experimental Pretest</th>
<th>Posttest</th>
<th>Comparison Pretest</th>
<th>Posttest</th>
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<tbody>
<tr>
<td>Knowledge of Reading</td>
<td>16.69 (N=16)</td>
<td>21.44</td>
<td>13.15 (N=73)</td>
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<td>(Multiple Choice)</td>
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<td>Statements Survey</td>
<td>90.35 (N=17)</td>
<td>96.00</td>
<td>82.67 (N=73)</td>
<td>80.93</td>
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<td>(Likert)</td>
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<tr>
<td>Situations Survey:</td>
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<tr>
<td>(Semantic Differential)</td>
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<tr>
<td>Reaction to Situations</td>
<td>378.69 (N=16)</td>
<td>409.31</td>
<td>352.31 (N=73)</td>
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<td>Feasibility</td>
<td>68.88 (N=17)</td>
<td>79.88</td>
<td>67.73 (N=73)</td>
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<td>Perceived Skill</td>
<td>68.38 (N=16)</td>
<td>78.25</td>
<td>63.53 (N=73)</td>
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<td>Total</td>
<td>516.94 (N=16)</td>
<td>567.44</td>
<td>483.58 (N=73)</td>
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Table 2
Analysis of Variance, Treatment x Time

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<td>9.55**</td>
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<td>Error</td>
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*p < .05

**p < .01

***p < .001
Reference

Appendix

Sample item from Statements Survey: Teaching Reading in Content Areas
(J. W. Lee, C. J. Young, E. N. Askov, M. M. Dupuis)

It is important that teachers be competent in assessing the general reading levels of students.

- (a): Strongly Disagree
- (b): Slightly Disagree
- (c): Not Sure
- (d): Slightly Agree
- (e): Strongly Agree

Sample item from Situations Survey: Teaching Reading in Content Areas
(J. W. Lee, C. J. Young, E. N. Askov, M. M. Dupuis)

SITUATION: An English teacher is preparing to teach a short story from the anthology suggested in the curriculum guide.

PLAN: The teacher plans to assign those who are competent readers to read the story on their own and engage in several individualized assignments. The less competent readers will read the story in a guided reading lesson during which the teacher will provide considerable help in vocabulary, concept development, and comprehension.

practical: practical: impractical
ineffective: effective
inefficient: efficient
useful: useless
desirable: undesirable

On the basis of your classroom experience, how feasible would you say the above plan is?
feasible: not feasible

How skilled are you at this time for executing a plan like the one described above?
skilled: unskilled